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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,172	02/27/2002	Steven Shawn Smith	010886.00670	1372
22907	7590	12/21/2005	EXAMINER PENDLETON, BRIAN T	
BANNER & WITCOFF 1001 G STREET N W SUITE 1100 WASHINGTON, DC 20001			ART UNIT 2644	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,172

Applicant(s)

SMITH, STEVEN SHAWN

Examiner

Brian T. Pendleton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-18 and 20-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-18 and 20-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Response to Arguments***

Applicant's arguments filed 8/8/05 have been fully considered but they are not persuasive. Applicant alleges that Maisano does not disclose superimpositioning a desired main beam with a steerable beam. However, it is clear from the reference that a second order cardioid is produced by the apparatus of figure 8. The signal formed by beamformer 32 is a first order cardioid. Thus, the signal output from unit 28 is a steerable first order beam itself, the beam being steerable by unit 30.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Maisano, US Patent 6,766,029. Maisano discloses a system comprising transducers 2a, 2b, beamformer 32 for producing a fixed input beam, and algorithmic block comprising units 28 and 29' for producing a narrowed on-axis beamwidth by superpositioning the fixed input beam with the beam from transducer 2a phase shifted by shifter 29'. Claims 1, 3, 4, 5 are met.

Claims 1, 3-5, 8, 9, 14-16, 18, 20, 23-27, 29, 30, 34, 36-39 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoshuyama, US Patent 6,449,586. Hoshuyama discloses a microphone array system used to follow the movement of an interference signal and canceling

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said signal from a target signal comprising transducers 1_0 - 1_{m-1} beamformer 2, blocking matrix 20 and multi-input canceller 31 as an algorithmic block for narrowing the on-axis bandwidth. An output signal is generated by adder 9.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 7, 21, 22, 31-33, 35, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshuyama. Hoshuyama does not disclose multiple desired main beams and narrowed multiple desired main beams. In re Harza 274 F.2d 669, 124 USPQ 378 dictates that no patentable weight be assigned to a duplication of parts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide multiple desired main beams and narrowing them for the purpose of supplying a plurality of desired signals. Per claims 35 and 40, Examiner takes Official Notice that it was well known to accomplish signal processing in the analog or digital domain.

Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshuyama in view of Ohkubo et al. Hoshuyama does not disclose multiple sound paths to the transducer wherein the multiple sound paths create multiple signals corresponding to the multiple sound paths and wherein the multiple sound paths create a phase shift in the multiple signals. Ohkubo

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discloses a microphone device in figure 12 having a transducer 25 with multiple sound paths 21, 22, and 23, multiple signals, and with a phase shift among the multiple signals. As disclosed in column 8 line 65 – column 9 line 2, it was possible to create a directional signal by using only one microphone. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to substitute the microphone device of Ohkubo for the plurality of microphones 30 in Hoshuyama for the purpose of picking up sound signals with directionality with less equipment. Claim 10 is met. Per claims 11-13, the sound paths 21-23 meet the limitations.

Claims 17 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshuyama in view of Marash. Hoshuyama does not disclose that the step of determining a location of a desired main is by multidimensional Fourier transforms. Marash discloses the use of multidimensional Fourier transforms to determine the “look” direction main beam. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to use the technique of Marash in the invention of Hoshuyama for the purpose of providing an improved main beam.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (571) 272-7527. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian T. Pendleton
Primary Examiner
Art Unit 2644



btp